

[REDACTED] WITH [REDACTED]
**STUDY OF THE EFFECTS OF URANIUM MINE DEWATERING
 ON THE WATER RESOURCES OF THE PUEBLO OF LAGUNA, NEW MEXICO**

This Agreement made and entered into this 33rd day of September, 1980, by and between the Pueblo Council of the Pueblo of Laguna, acting for and on behalf of the Pueblo of Laguna, New Mexico, hereinafter referred to as "Pueblo" and Hydro Geo Chem, Inc., Groundwater Consultants, Tuscon, Arizona, hereinafter referred to as the "Contractor".

I

Scope of Work

The work under this contract will consist of furnishing all services, materials, supplies, labor and superintendence and performing all work necessary to execute and deliver a study of the effects of uranium mine dewatering and uranium mining activity on and near the reservation on the surface and groundwater resources of the Pueblo of Laguna in strict accordance with these specifications.

II

Statement of Work

The Contract shall provide the research, the professional and technical expertise, and the reporting and printing services required to consolidate, analyze, and evaluate existing data, to collect additional data, to supervise the collection of additional data by others, and coordinate and supervise all efforts to produce additional data, to evaluate and assess the effect of water use, specifically uranium mine dewatering, uranium mill effluent and disposal and other uranium mining activities on and near the reservation upon the surface and groundwater resources of the Pueblo. The intent of this study is for the Contractor, USGS, and BIA to work together, with the USGS and BIA supplying as much information as has already been compiled (or may hereafter be compiled), and the Contractor providing the remainder of the information required to produce the finished report. The report shall be divided into the following three phases and shall have, in addition to the narrative portion, suitable maps, charts and summary tables applicable to each section:

1. Compilation and analysis of existing data.
2. Numerical modeling.
3. Water quality monitoring design program.

III

Work Items

A. Reports

The nature and extent of the data to be contained in each phase shall include, but not be limited to, the following:

1. Compile and analyze existing data to establish a baseline of water quantity and quality. Maps, drawings, and tables shall be included in the report which shall show well data, potentiometric surfaces, transmissivities and hydraulic conductivities, surface floors, withdrawal, and other hydrologic information in the project area. The report shall incorporate geologic data in proper form for construction of a hydrologic numerical flow model. Detailed cross-sections, isopach maps, outcrops, extent of aquifer units, faulting, and volcanics shall be included. The report shall show background water quality, geochemical boundaries, water chemistry relationships with time, geology, and human activities. Point, line, and diffuse pollutant sources shall be identified and delineated on maps and drawings.
2. Numerical modeling. The numerical modeling to be performed under this contract shall consist of developing a regional groundwater flow model to assist in the estimation of the effects of groundwater withdrawals for uranium mining, milling and other mining activities on the water resources of the Pueblo of Laguna. The areal extent of the model shall be sufficient to evaluate the behaviour of the jurassic aquifers under the reservation. The boundary of hydrogeologic influence shall be determined and agreed upon by the parties during the preliminary stages of the study. The vertical coverage of the model shall be sufficient to evaluate spring flows on the reservation, but will depend on the extent of interaction between the jurassic aquifers and the surrounding water bearing units.

The numerical model will be used to assist in defining the present head distribution and pattern of groundwater movement in the Westwater and Jackpile members of the Morrison formation, including discharges to the lands' surface. The model will also be used to estimate the natural head distribution and flow patterns which existed before artificial withdrawals from the aquifers began. Finally, the model will be used to evaluate the future response of the aquifer system and associated springs and streams to predicted withdrawals for uranium mining and milling, and other relevant withdrawal uses through the year 2030.

3. Water quality monitoring design program. A monitoring program will be designed under this contract to accomplish the following goals:
 - (a) Define informational requirements to verify the study projections. This task will require an evaluation of existing data sources to determine the sufficiency of such data points for future monitoring of the effects of mining milling upon the reservation resource.
 - (b) Study the benefits of results from the establishment of additional data sources versus costs to be incurred. It may be necessary to propose new well sites or deepen existing wells in order to complete the monitoring network. Such a drilling program is not considered a part of this contract.
 - (c) Establish personnel training and scheduling for an ongoing water quality and quantity monitoring program of sufficient duration to

provide meaningful future information as to the effects of uranium mining and milling on the reservation's water resource base.

In addition to the above work items, the proposal submitted by Contractor dated November 13, 1979, is attached hereto as Exhibit "A" and incorporated by reference as though fully set forth herein. Any work items not specifically set forth or defined above but included in Exhibit "A" shall be performed by Contractor within the context of this contract.

Further, the Amendment of Solicitation/Modification of Contract dated September 18, 1980, is attached hereto as Exhibit "B". The work items set forth in said Amendment/Modification shall be performed in strict compliance with the provisions therein.

IV

Subcontracts

The Contractor may subcontract portions of the work, with the approval of the Pueblo. Subcontractor shall be subject to the provisions of the contract, and the Contractor shall be responsible for the work product.

V

Consultation

The Contractor shall consult and work closely with the Pueblo, BIA and USGS during the performance of all work required under this contract in order to obtain instructions, data, and requirements for the preparation of the various features of work set forth in the requirements of the contract. A discussion of work progress will be reported to the Pueblo, BIA and USGS monthly.

VI

Services and Materials to be Provided By Government

The following publications, reports and maps will be provided to the Contractor by BIA. The following data and all filed data pertinent to the complete report shall be made available to the Contractor upon request.

- A. Pueblo authorization for the study.
- B. Water related publications and technical appendices.
- C. Statistical data.
 - 1. Well logs.
 - 2. Reservoir data.

D. Base maps for Laguna reservation. A thorough compilation of the existing data on water quality and quantity is the Contractor's responsibility under work item III. A. 1. above.

VII

Preparation of Reports, Maps, and Plans

Contractor shall prepare a "draft" report illustrated by reproductions of significant maps, charts, and plans. Ten copies of the draft report shall be furnished. Prior to preparing the "final" reports, the Contractor will meet with the Pueblo, BIA and the USGS to review the "draft" report.

VIII

Final Conference

The Contractor will meet with the Pueblo, BIA and the USGS at the conclusion of the project to review the final report prior to printing.

IX

Report Revisions

The Contractor shall, without additional compensation, make such revisions and alterations to the "draft" report within the scope of work as may be required by the Pueblo of Laguna, the BIA, and/or the USGS, prior to issuing the "final" report.

X

Reports and Deliverables

A. Progress reports shall be made at monthly intervals beginning with the last day of the month following commencement of the work. The reports shall contain any circumstances pertinent to the progress of the study and delays, if any, should be fully explained.

B. Five copies each of the final report shall be furnished to the BIA, the USGS and, the Pueblo of Laguna, for the sums stipulated in the payment schedule. The reports are to be the property of the Pueblo and are to be kept confidential and released only to the Pueblo, BIA, USGS, or persons authorized by the Pueblo or its attorneys.

XI

Indian Employment Preference

The Contractor shall give preference in employment for all work performed under the contract including subcontracts thereunder, to qualified Indians regardless of age, religion or sex and, to the extent feasibly consistent with the efficient performance of the contract, provide employment and training opportunities to Indians regardless of age, religion or sex.

XII

Contract Term

(b) (4)

The Contractor shall, if requested, stand ready to testify on his findings. However, it is understood that the payment for such testimony is outside of this contract and would be paid at the standard rates for such services.

XIII

Payments

(b) (4)

(b) (4) Upon completion of each phase of the work in a manner satisfactory to the contracting officer, **(b) (4)** shall be paid the Contractor leaving a **(b) (4)** on each phase of the work until satisfactory completion of the entire contract. After final completion of the contractual requirements, the balance of monies owed will be reimbursed to the Contractor.

The Contractor is required to retain all records pertinent to charges and costs incurred in the performance of this contract.

Requests for monthly reimbursement shall be submitted to the contracting officer through the contracting officer's representative. Reimbursement requests shall be supported with a breakdown of incurred costs for the payment.

XIV

Change in Personnel

Changes in personnel who are designated in the project description and other documents heretofore submitted to the Pueblo by the Contractor shall be made only with the approval of the Pueblo.

XV

Confidentiality

All material furnished or produced by the Contractor under this Agreement, including but not limited to documents, reports, testimony and correspondence will be, and remain, confidential to the Pueblo. The Contractor shall not release information to any person, group of persons, firm or organization other than the Pueblo and/or its attorneys, which information relates to work performed, research or information derived from work performed under this Agreement without the express written consent of the Pueblo. Breach of this confidentiality shall be deemed a substantial breach of this Agreement and may be grounds for rescission. The Contractor may not use the product of their research under this Agreement for any purpose, before, during or after the completion of this study without specific written permission of the Pueblo.

XVI

Conflicts of Interest

The Contractor shall not during the term of this Agreement, perform services as an expert, prepare, assist in the preparation or present expert testimony on behalf of any other entity, corporation, governmental body or subdivision, individual or partnership with any interest whatsoever in the water resources, ground or surface, within the study area defined by this Agreement.

XVII

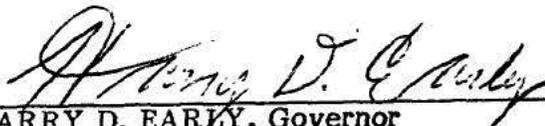
Modifications

This Agreement may be modified at any time by agreement of the parties hereto.

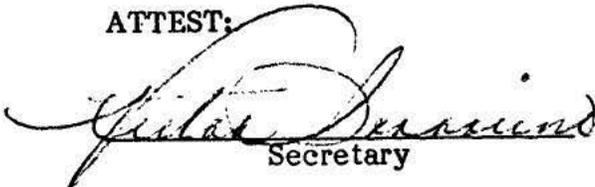
XVIII

Project Schedule

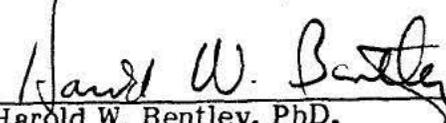
The project schedule shall be attached hereto as Exhibit "C".


HARRY D. EARLY, Governor
Pueblo of Laguna

ATTEST:


Secretary

HYDRO GEO CHEM, INC.

By 
Harold W. Bentley, PhD.
Director, Hydro Geochem, Inc.